Determination of the composition and ....

$$\frac{\phi - \phi_0}{[A]} \quad \text{from} \quad \frac{\psi_1 - \psi_1^0}{[A]}$$

is plotted and its slope equaling β_1 is found. Figures 1,2,3 and 4 show the establishment of the compositon of complex ions, indicating the dependence of logarithm ψ of americium and curium on different ion complexes. For the calculation of the instability constants of complex ions formulae (8) and (10) were used, rendering the following expressions:

$$\psi_1 \simeq \beta_1 - l_1 = \psi_1^0 \qquad (15)$$

and

$$\psi_2 \quad \frac{\beta_2 - l_2}{\psi_1^0} - l_1 = \psi_2^0 \qquad (16)$$

thus, ψ_1 and ψ_2 were dealt with as the average values of ψ_1 and ψ_2, in points where they were constant. The constancy of the values of ψ_1 and ψ_2

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Determination of the composition and ....

are also considered an indication of the fact that the sorption of the complex ion can be disregarded as compared to the sorption of the free cation, i.e., the values of l_1 and l_2 can be disregarded in formula (7) and (8). Table 10 is a list of the determined vallues of general instability constants of the oxalate, nitrate and sulfate complexes of $Am^{(III)}$ and $Cm^{(III)}$ and the values of the step instability constants of the $Am^{(III)}$ and $Cm^{(III)}$ complexes

$$K_1 = \frac{1}{\beta_1} \quad \text{and} \quad K_2 = \frac{\beta_1}{\beta_2}$$

recalculated for zero ionic strength, using the activity coefficients for the oxalate ions, (Ref. 9) and the Davis equation. In discussing the experimental results the authors state that a fair amoun of corresponding results was obtained experimentally of the instability constants of the $Am(C_2O_4)_2^-$ ion, using the insolubility method (Ref. 4: I. A. Lebedev. S. V. Pirozhkov, B. M. Razbitnoy, G. N. Yakovlev, Radiokhimiya, 2, 3, 351, 1960) and ion-exchange (in both cases $6.9 \cdot 10^{-5}$). The instability constant of the first complex ($AmC_2O_4^+$) determined by the above methods differed by a

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factor of two ($5.0 \cdot 10^{-7}$ and $1.0 \cdot 10^{-6}$) explained by the error introduced in determining the product of solubility of the americium oxalate and C_2O_4'', the values of which are part of this constant. A comparison of the literature values and those obtained by the authors for the instability constants of nitrate complexes of tri-valent lanthanides and actinides, point to a regular decrease of the complex stability with a drop in the radii of the central ions (Table 11). This comes from the addend (nitrate-ion) having large dimensions. The comparison of the instability constants of the same complex ions of Am^{3+} and Cm^{3+} shows an obvious tendency to a weakening of the complex stability in curie, as compared to americium. It is thought that the screening effect of the 5f-electrons is present here. There are 11 tables, 5 figures and 13 references: 6 Soviet-bloc and 7 non-Soviet-bloc. The four recent English language publications read as follows: M. Ward, G. A. Welch, J. Inorg. Nucl. Chem., 2, 395, 1956; G. D. Pinching, R. G. Bates, J. Reseach. Nat. Bur. Stand., 40, 405, 1948; C, E. Crouthamel, D. S. Martin, J. Am. Chem. Soc., 73, 569, 1951; F. H. Spedding, S. Jalfe, J. Am. Chem. Soc. 76, 882, 1954.

L [illegible], I.A.; YAKOVLEV, G.N.

Ion exchange method for the determination of the composition and instability constants of Am^{III} and Cm^{III} chloro complexes. Radiokhimiia 3 no.4:452-457 '61. (MIRA 14:8)

(Americium compounds)
(Curium compounds)
(Ion exchange)
(Chlorides)

DEDOV, V.B.; LEBEDEV, I.A.; RYZHOV, M.N.; TRUKHLYAYEV, P.S.; YAKOVLEV, G.N.

Americium and curium complexing with α-hydroxyisobutyric acid. Radiokhimiia 3 no.6:701-705 '61. (MIRA 14:12)
(Americium compounds)
(Curium)
(Isobutyric acid)

S/186/61/003/006/010/010
E040/E185

24.6210

AUTHORS: Lebedev, I.A., Pirozhkov, S.V., Semochkin, V.M., and Yakovlev, G.N.

TITLE: Separation of protactinium by the ion exchange method and properties of some protactinium compounds.

PERIODICAL: Radiokhimiya, v.3, no.6, 1961, 760-761

TEXT: Protactinium (Pa^{231}) was separated from neutron-irradiated specimens of thorium oxide enriched with ionium (Th^{230}). The specimen weighed 6.3 g and contained 2.01 g of ionium. Purification of the products of the reaction was carried out in an ion-exchange column made of Teflon and charged with Dowex-1X8 resin ground to 500 mesh. Uranium, protactinium and iron (retained on the resin) were washed out with 250 ml of 0.5N HCl + + 0.1N HF. The α-radiation of the sample was determined in an ionizing spectrometer in conjunction with a 50-channel α-analyzer. 18% of the radiation was found to come from protactinium and 82% from uranium, which corresponds to 99.9% Pa^{231} and 0.1% U^{232} by weight. Measurement of the total radiation of the sample showed it to contain 11.8 mg of protactinium and 11 μg of U^{232}.

X

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S/186/61/003/006/010/010
E040/E185

Separation of protactinium by the ....

The sample was further purified and the impurities (Na, Mg, Ca, Ba and Fe) were reduced to below 3%. Brief chemical properties and methods of preparation are given of protactinium oxide $PaO_{2.25}$, hydroxide, iodate and phynylarsonate. Acknowledgments are expressed to S.A. Baranov, Yu.F. Rodionov and N.M. Yashin for assistance. There are 11 references: 3 Russian translations from non-Soviet-bloc publications and 8 non-Soviet-bloc. The four most recent English language references read as follows:

Ref. 2: J. Golden, A.G. Maddock, J.Inorg.Nucl.Chem., v.2, 1, 46 (1956).

Ref. 4: M.L. Salutsky, K. Shaver, A. Elmlinger, M.L. Curtis, J. Inorg. Nucl, Chem., v.3, 5, 289 (1956).

Ref. 9: K.A. Kraus, G.E. Moore, J. Am. Chem. Soc., v.77, 5, 1383 (1955).

Ref.10: A.G. Maddock, W. Pugh, J. Inorg. Nucl. Chem., v.2, 2, 114 (1956).

SUBMITTED: July 19, 1960

Card 2/2

S/186/62/004/003/008/022
E071/E433

AUTHORS: Lebedev, I.A., Yakovlev, G.N.

TITLE: The determination of the composition and stability constants of thiocyanide complexes of $Am^{(III)}$, $Cm^{(III)}$ and $Ce^{(III)}$ by an ion exchange method

PERIODICAL: Radiokhimiya, v.4, no.3, 1962, 304-308

TEXT: Complex formation of trivalent actinides and lanthanides with thiocyanide ion is used for group separation of these elements, but the exact composition of these complexes and their stability constants are unknown. The authors studied complex formation of trivalent americium and curium with thiocyanide anions on changes in their concentration from 0.064 to 5.0 M. For comparison the formation of complexes of $Ce^{(III)}$ under the same conditions was also studied. The experimental method consisted of the determination of the sorption of Am^{3+}, Cm^{3+} and Ce^{3+} on cationite KY-2 (KU-2) in ammonium or sodium form on the concentration of thiocyanide ions at ionic force 0.5 and 5. Indicator quantities of Am^{241}, Cm^{242} and Ce^{144} were used. Experiments at ionic force $\mu = 0.5$ were made in ammonium

An investigation of the decomposition ..

constant of 0.22 ± 0.04 days^{-1}. The mixture of gases evolved on decomposition consists of CO_2 and CO with a prevalence of CO_2. There are 4 figures and 2 tables.

SUBMITTED: May 29, 1961

Card 2/2

S/186/62/004/003/009/022
E071/E433

AUTHORS: Lebedev, I.A., Pirozhkov, S.V., Razbitnoy, V.M., Yakovlev, G.N.

TITLE: An investigation of the decomposition of americium oxalate under the influence of its own α-radiation

PERIODICAL: Radiokhimiya, v.4, no.3, 1962, 308-312

TEXT: Radiolysis of the oxalate group in solid compounds under the influence of α-radiation has been studied on oxalate of plutonium-239. However, the composition of the gas evolved during the decomposition was not studied. In the present work the authors investigated the decomposition of oxalate of americium-241 by studies of the change in weight of the residue with time, accumulation of carbonate and the amount and composition of gas evolved. It was found that oxalate of trivalent americium on standing is decomposed under the influence of its own α-radiation, passing into carbonate. The decomposition is completed after 15 to 20 days and after 50 to 60 days the composition of the residue corresponds to $Am_2(CO_3)_3 \cdot 5H_2O$. This decomposition is a first order reaction with a velocity

The determination of ...

thiocyanide solutions with additions of ammonium perchlorate and at $\mu = 5.0$ in sodium thiocyanide with addition of sodium perchlorate. In all cases pH = 4 was maintained. It was found that at $\mu = 0.5$ complex ions of the form $MSCN^{2+}$ are present. At $\mu = 5.0$ the type of complexes formed depended on the concentration of thiocyanide ions. At concentrations up to 1 M only $MSCN^{2+}$ ions and at concentrations above 1 M mainly ions of the type $M(SCN)_3$ were present. Moreover, at concentrations between 4 and 5 M the appearance of considerable quantities of complex ions $Am(SCN)_4^-$ and $Cm(SCN)_4^-$ was observed, while cerium did not form this type of ions. On the basis of experimental results stability constants for the respective compounds were calculated. It is concluded that the possibility of group separation of trivalent lanthanides and actinides on an anionite using a concentrated thiocyanide solution is based on a substantial difference in the stability constants of complex ions formed under these conditions, as well as on the formation by actinides negatively charged complex ions. There are 2 figures and 3 tables.

SUBMITTED: April 24, 1961
Card 2/2

ZAYTSEV, A.A.; LEBEDEV, I.A.; PIROZHKOV, S.V.; YAKOVLEV, G.N.

Extraction of rhenium and molybdenum with trioctylamine from sulfuric acid solutions. Zhur.neorg.khim. 8 no.9:2184-2186 S '63. (MIRA 16:10)

LEBEDEV, I.A.; PIROZHKOV, S.V.; RAZBITNOY V.M.; YAKOVLEV, G.N.

[Complexing of Am^{+3} with oxalaye ions] Izuchenie kompleksoobrazovaniia Am^{+3} s oksalat-ionami. Moskva, In-t atomnoi energii AN SSSR, 1960. 14 p. (MIRA 17:1)

LEBEDEV, I.A.; PIROZHKOV, S.V.; YAKOVIEV, G.N.

[Determination of the composition and instability constants of the oxalate, nitrate, and sulfate complexes of Am (III) and Cm (III) by the ion exchange method] Opredelenie sostava i konstant nestoikosti oksalatnykh nitratnykh i sul'fatnykh kompleksov Am (III) i Cm(III) metodom ionnogo obmena. Moskva, In-t atomnoi energii, 1960. 20 p. (MIRA 17:1)

GURICHEV, Ye. S.; DEDOV, V. B.; LEBEDEV, I. A.; YAKOVLEV, G. N.

"Extraction and some chemical properties of transplutonium elements."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

L 36974-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD S/0186/64/006/004/0440/0444

ACCESSION NR: AP4043851

13 B

AUTHOR: Zaytsev, A. A.; Lebedev, I. A.; Pirozhkov, S. V.; Yakovlev, G. N.

TITLE: Extraction of technecium from nitric acid solutions by phosphoric acid derivatives and trioctylamine 27

SOURCE: Radiokhimiya, v. 6, no. 4, 1964, 440-444

TOPIC TAGS: technecium extraction, organic phosphate, tributyl phosphate, trioctylamine, alkyl amine, phosphine oxide, trioctyl phosphine oxide, methylphosphonic acid

ABSTRACT: Studies on the extraction of the short-lived radioactive isotope Tc-99 by a variety of organic phosphates, phosphonic acid esters and amines showed that technecium cannot be extracted from 0.1-4 M HNO_3 solutions by acidic reagents. High distribution coefficients were obtained, however, with neutral phosphates such as tri-n-octylphosphine oxide, diisoamylmethylphosphonate and tributyl phosphate, and especially with trioctylamine. The degree of extraction was found to depend on both the HNO_3 concentration and the concentration of organic extractant; thus, the highest distribution coefficients were obtained with 0.1 M HNO_3 in the case of

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L 36974-65
ACCESSION NR: AP4043851

trioctylphosphine oxide and trioctylamine but with 0.5-1 M HNO_3 in the case of tributylphosphate and diisoamylmethylphosphonate. Studies on the extraction of Tc by diisoamylmethylphosphonate from $HNO_3/NaNO_3$ solutions in which the pH was varied but the ionic strength was kept constant showed that the distribution coefficient is independent of the pH but is proportional to the 2.2-3.2 power of the diisoamylmethylphosphonate concentration. After extraction of Tc with these organic solvents, it can best be isolated by extraction with ammonia; in the case of tributyl phosphate, this reextraction is difficult, which impairs the usefulness of this extractant. Orig. art. has: 6 tables, 3 figures and 1 formula.

ASSOCIATION: None

SUBMITTED: 02Jan63

NO REF SOV: 004 ENCL: 00 SUB CODE: IC

OTHER: 002.

Card 2/2

L 36975-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD S/0186/64/006/004/0445/0448

ACCESSION NR: AP4043852

AUTHOR: Zaytsev, A. A.; Lebedev, I. A.; Pirozhkov, S. V.; Yakovlev, G. N.

TITLE: Extraction of technecium (VII) from alkaline solutions by pyridine derivatives

SOURCE: Radiokhimiya, v. 6, no. 4, 1964, 445-448

TOPIC TAGS: technecium extraction, uranium fission product, pyridine derivative, neutron bombardment, distribution coefficient, alkali cation, sodium nitrate

ABSTRACT: In a continuation of work on the purification of radioactive technecium (Tc-99, prepared by bombardment of molybdenum with neutrons) by extraction procedures, the authors investigated the extraction of heptavalent Tc from alkaline solutions by 4 different pyridine derivatives: 2-methylpyridine, quinoline, 2,4-dimethylpyridine, and 2-methyl-5-ethyl-pyridine. Most attention was paid to the last 2, since these were found to be the most convenient to use, even though 2-methylpyridine yielded even higher distribution coefficients in most media. A study of the effect of the pH and the nature of the alkali cation on the distribution coefficient of Tc showed that optimal extraction by 2,4-dimethylpyridine and 2-methyl-5-ethylpyridine is obtained from 1-3 M NaOH, and that even better extraction is

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L 36975-65
ACCESSION NR: AP4043852

possible from LiOH solutions; i.e., the distribution coefficients decreased in the order: Li > Na > K > NH_4 > Rb > Cs. Other studies showed that the addition of Na_2CO_3 contributed to better extraction of Tc, while addition of $NaNO_3$ decreased the distribution coefficients considerably. Comparative studies on the extraction of some uranium fission products (Zr, Mo, Ru, Cs and Pm) by 2-methyl-5-ethylpyridine from ammonium carbonate solution showed very low distribution coefficients in all cases, indicating that a rather high degree of purification of Tc can be achieved in this way. The Tc can be isolated (reextracted) from the pyridine derivatives either by steam distillation of the solvent of by extraction with water or alkaline solution after dilution of the solvent with benzene, dichloroethane or chloroform. Orig. art. has: 1 figure, 5 tables and 1 formula.

ASSOCIATION: None

SUBMITTED: 02Jan63 ENCL: 00 SUB CODE: IC

NO REF SOV: 002 OTHER: 005

Card 2/2

L 54748-65 EWT(m)/EWP(j)/T/EWP(t)/EWP(b) Pc-4 IJP(c) JD/JW/GS/RM

ACCESSION NR: AT5015400 UR/0000/65/000/000/0183/0189
541.49: 546.799.5: 66.074.7

30
29
13 +1

AUTHOR: Yakovlev, G. N.; Lebedev, I. A.

17

TITLE: Ion-exchange study of complex formation between trivalent americium and acetate ions

SOURCE: AN SSSR. Otdeleniye obshchey i teknicheskoy khimii. Soosazhdeniye i adsorbtsiya radioaktivnykh elementov (Coprecipitation and adsorption of radioactive elements). Moscow, Izd-vo Nauka, 1965, 183-189

TOPIC TAGS: cation exchange resin, complex formation, americium purification, acetate ion, americium adsorption, thermodynamic instability constant

ABSTRACT: The adsorption of trace quantities of Am^{3+} (the Am^{241} radioisotope) was studied on the Dowex 50x8 cation-exchange resin as a function of the acetate ion concentration. It was found that when the latter ranged from 1.4×10^{-3} to 0.5 M, the ions $AmAc^{2+}$ and $Am(Ac)_2^{+}$ were present in the solution. The partition coefficients of Am between the resin and the solution were determined under static conditions. The instability constants of acetate complexes of Am were calculated at ionic strengths of 0.2, 0.5, and 1.0. By

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L 54748-65

ACCESSION NR: AT5015409

extrapolating the values obtained to zero ionic strength, the thermodynamic instability constants of the ions $AmAc^{2+}$ and $Am(Ac)_2^{+}$ were found to be 1.2×10^{-3} and 6.4×10^{-3}, respectively. The neutral complex $Am(Ac)_3$ may also be present in the solution, but its instability constant could not be calculated because of insufficient evidence of its existence. Orig. art. has: 2 figures, 11 formulas, and 4 tables.

ASSOCIATION: None

SUBMITTED: 12Dec63 ENCL: 00 SUB CODE: IC

NO REF SOV: 007 OTHER: 013

Gac
Card 2/2

L 00037-66 EWT(m) DIAAP

ACCESSION NR: AP5020306 UR/0186/65/007/004/0453/0461

539.172.4 : 546.799.5.03.241 : 546.799.6.03.242 + 546.799.6.03.243

AUTHOR: Dedov, V. B.; Volkov, V. V.; Gvozdev, B. A.; Yermakov, V. A.; Lebedev, I.A. Razbitnoy, V. M.; Trukhlyayev, P. S.; Chuburkov, Yu. T.; Yakovlev, G. N.

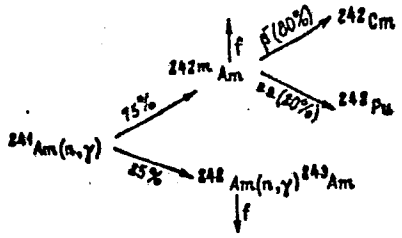
TITLE: Production of Pu-242 and Cm-242 from neutron-irradiated Am-241

79, 25 B

SOURCE: Radiokhimiya, v. 7, no. 4, 1965, 453-461

TOPIC TAGS: plutonium, curium, americium, extraction, neutron irradiation

ABSTRACT: Irradiation of Am-242 with thermal neutrons produces Pu^{242}, Cm^{242} and Am^{243} which are of great interest in a number of physical and radiochemical investigations. The synthesis scheme is as follows:



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L 00037-66
ACCESSION NR: AP5020306

The thermal neutron cross section of Am^{241} is 900 barn, thus even upon short irradiation with a high density thermal-neutron beam a significant amount of the above isotopes may be produced. It can be seen from the above process that the yield of fission products is small since they are produced mainly during fission of Am^{242}. This facilitates the chemical processing of irradiated substances. Production of Pu^{242} by this process requires much less time than the method which uses Pu^{239} as starting material. The authors describe the chemical separation of Pu^{242}, Cm^{242} and Am^{243} from irradiated Am^{241}. The scheme for the chemical processing was selected to be such that it would produce rapid separation of the products. The main separation steps involved chromatographic and chemical extraction methods. Chromatographic separation was made extremely difficult by high α-activity due to the presence of Cm^{242}. Chemical processing was carried out in a shielded area on a special stand with remote control of all operations. The article indicates some properties of curium oxalate, potassium curium sulfate, curium hydroxide and curium carbonate. Orig. art. has: 5 tables and 3 figures.

ASSOCIATION: none

SUBMITTED: 18Apr64 ENCL: 00 SUB CODE: GC, NP

NO REF SOV: 004 OTHER: 005

Card 2/2

LEBEDEV, I.F.

Work of a composite crew for the exchange of leading production experience in the tire industry. Khim.volok. no.5:67-68 '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy institut tekhniko-ekonomicheskikh issledovaniy Goskomiteta Soveta Ministrov SSSR po khimii.
(Tires, Rubber)

LEBEDEV, I. G.

32624. LEBEDIV, I. G. Rezul'taty Opytnykh Rabot Po Skreshchivaniyu Darvazskikh Ovets S Vyurtembergskimi Baranami V Vostochnom Tadzhikistane. Izvestiya Tadzh. Filiala Akad. Nauk SSSR, No. 13, 1947, s. 19-39. --Bibliogr: 5? Nazv.

SO: Letopis'Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

LEBEDEV, I. G.

Lebedev, I. G. "Tadzhik Goats and methods to improve them", Trudy (Akad. nauk SSSR, Tadzh. filial, In-t eksperim. zootekhnii), Vol. XXIII, 1948, p. 95-123, - Bibliog: 21 items.

SO: W-411, 17 July 53, (Letopis' Zhurnal 'nykh Statey, No. 20, 1949).

LEBEDEV, I. G.

33360.. Sozdaniye Gornogo Donkorunnoto Ovetevodstva V Tadzhikistane. Sel. Khoz-vo Tadzhikistana, 1949, No. 5, c. 42-45

30. Letopis' Zhurnal'nykh Statey, Vol.45, Moskva, 1949

IEBEDEV, I. G.

6830. Lebedev, I. G. Razvivat' gornoye tonkorunnoye ovtserodstvo. (Tadzhik. SSR). Stalinabad. Tadzhikgosizdat, 1954. 15 c. 20 sm. 1.000 ekz. 15 k. -- (55-2806) P 636.3.082 (584.5)

SO: Knizhnaya Letopis'No. 6, 1955

Q

USSR / Farm Animals. Cattle

Abs Jour: Ref Zhur-Biol., No 5, 1958, 21458

Author : Lebedev I. G.
Inst :
Title : The Methods of Breeding Sheep of the Hissar Breed (Osnovy plemennoy raboty s gissarskoy porodoy ovets)

Orig Pub: S. kh. Tadzhikistana, 1956, No 9, 21-27

Abstract: The article provides characteristics of the exterior, productiveness, as well as the key for the qualitative evaluation of Hissar sheep. An account is given of the problems and methods of breeding work on the breeding and production farms.

Card 1/1

USSR/Farm Animals - Small Horned Stock

Abs Jour : Ref Zhur - Biol., No 15, 1958, 69334

Author : Lebedev, I.G.
Inst : -
Title : Feeding and Maintenance of Fine-Wool Sheep in Tadzhikistan

Orig Pub : Khodzhagii kishloki Todzhikiston, 1957, No 5, 13-18; S. kh. Tadzhikistana, 1957, No 5, 16-21

Abstract : No abstract.

Card 1/1

USSR / Farm Animals. Cattle Q

Abs Jour: Ref Zhur-Biol., No 5, 1958, 21456

Author : Lebedev I. G.
Inst :
Title : The Gorno-Darvaz Fine-Wool Sheep in Tadzhikistan (Gornodarvazskiye tonkorunnyye ovtsy v Tadzhikistane)

Orig Pub: Ovtsevodstvo, 1957, No 6, 12-15

Abstract: The Gorno-Darvaz sheep were obtained by crossbreeding low producing coarse-wool Darvaz sheep with rams of the Wurttemberg breed. In order to secure the outstanding qualities of hybrid sheep the best ewes of the first, second and third generations were mated with hybrid rams of the second generation, with subsequent inbreeding. To improve wool qualities, the crossbreeding of the ewes with the fine-wool rams of

Card 1/2

LEBEDEV, I.I.

Machinery for preparing textile printing color. Tekst.prom.15 no.9:33 S '55. (MLRA 8:11)
(Textile printing--Equipment and supplies)

Lebedev, I. I.

AID P - 4083

Subject : USSR/Power Eng.

Card 1/1 Pub. 110-a - 8/14

Author : Lebedev, I. I., Eng., USSR Ministry of Higher Education.

Title : On training heat power engineers.

Periodical : Teploenergetika, 12, 41-44, D 1955

Abstract : The author discusses the necessity of good training for young engineering graduates and evaluates the school programs and requirements of the present. A detailed analysis of training in different fields of engineering is given.

Institution : None

Submitted : No date

LEBEDEV, I. I.

AUTHOR: Lebedev, I.I. 3-12-17/27

TITLE: The Scientific-Methodical Conference on Automation and Telemechanization (Nauchno-metodicheskaya konferentsiya po avtomatizatsii i telemekhanizatsii)

PERIODICAL: Vestnik Vysshey Shkoly, 1957, # 12, pp 77 - 79 (USSR)

ABSTRACT: Analyses of present training conditions in the fields of automation and telemechanization of technological processes revealed that the educational programs of these special disciplines do not provide the engineers with sufficient knowledge in the field of technology dealing with the production of automatic, telemechanical and measuring devices.

A scientific methodical conference was convened in June 1957 by the USSR Ministry of Higher Education. Present were vuz professors and teachers and leading workers of specialized enterprises. The plenary sessions dealt with the following reports: P.D. Lebedev on the conditions of engineering training in the fields of automation, telemechanization, measuring technics and calculation devices. N.S. Torocheshnikov on engineering training in the automation and telemechanization of chemical production.

Three directions are distinguished in the training of en-

Card 1/2

The Scientific-Methodical Conference on Automation and Telemechanization

gineers in these fields. The first direction provides that every engineer must possess definite knowledge of the automation and telemechanization of his specialty. The second direction includes the training of engineer technologists in the following specialties: "Electric plants, networks and systems", Thermoelectric installations of electric plants", "Metallurgical equipment of ferrous and nonferrous metallurgy". The third direction comprizes the training of electrical engineers in computation, construction and exploitation of elements, devices and schemes and the automatic and telemechanical control of the technological processes. The Conference decided to include disciplines for the control of industrial automation and telemechanization in all training programs of power engineering, machine building, technology, etc. Great attention was paid to the training of engineers specialized in the automation and telemechanization of the power plants, metallurgical, chemical and oil industries.

A.M. Damskiy, Director of a factory for electric measuring devices, recommended to create a new special section training mechanical engineers for the designing and technology of automatic, telemechanical and measuring apparatus. For the expansion of these disciplines chairs of instrument designing must be organized.

AVAILABLE: Library of Congress

Card 2/2

LEBEDEV, I.I.; YUSHKO, S.P.

Mining and ore dressing equipment of the East Kazakhstan Machine Manufacturing Plant. Gor.zhur. no.2:59-61 F '64. (MIRA 17:4)

1. Glavnyy inzhener Vostochno-Kazakhstanskogo mashinostroitel'nogo zavoda (for Lebedev). 2. Glavnyy konstruktor Vostochno-Kazakhstanskogo mashinostroitel'nogo zavoda (for Yushko).

VIKHREVA, Yelena Aleksandrovna; LEBEDEV, Ivan Ivanovich; GRUZINOV, V.I., redaktor; MAL'KOVA, N.V., tekhnicheskiy redaktor.

[Economizing on automobile tires; work practice of the no.30 motor column of the Yaroslavl' Province trust] Sberezhenie avtomobil'nykh shin; iz opyta raboty avtokolonny No.30 IAroslavskogo oblavtotresta. Moskva, Nauchno-tekhn.izd-vo avtotransp. lit-ry, 1956. 21 p. (Automobiles--Tires)
(MLRA 9:6)

LEBEDEV, I.K.

Possibilities of using steam drives for operating machines. Izv. TPI 89:75-84 '57. (MIRA 10:12)

(Steam engines)

LEBEDEV, I.K., kand.tekhn.nauk

Abraision caused by ashes in boiler units and its prevention.
Elek.sta. 29 no.11:22-25 N '58. (MIRA 11:12)
(Abraision) (Boilers)

LEBEDEV, I.K., kand.tekhn.nauk

Selecting burners using blast furnace gas for heat and electric power plant boilers in metallurgic factories. Energomashinostroenie 6 no.7:13-16 Jl '60. (MIRA 13:7)

(Metallurgical plants--Equipment and supplies)
(Gas burners)

LEBEDEV, I.K., kand.tekhn.nauk; KON'KOV, Ye.A., inzh.; TOKAROPOV, A.A., inzh.

Sludge of the wet preparation of coals of the Anzhero-Sudzhensk deposit as fuel. Izv. vys. ucheb. zav.; energ. 6 no.5:115-118 My '63. (MIRA 16:7)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskiy institut imeni S.M.Kirova. Predstavlena kafedroy kotlostroyeniya i kotel'nykh ustanovok Tomskogo ordena Trudovogo Krasnogo Znameni politekhnicheskogo instituta.
(Kemerovo Province--Coal preparation--By-products)
(Power resources)

LEBEDEV, I.K.

LEBEDEV, I.K. V bor'be za vozrozhdeniye i rastsvet sotsialisticheskoi [illegible]
Latvii. Riga, Latgosizdat, 1948. 65 p.

LC: HQ337.L3L4

So: LC, Soviet Geography, Part II, 1952/Unclassified

LEBEDEV, I.K.

LEBEDEV, I.K. Bol'sheviki Latvii v bor'be za razvitie proletarskoi... [Riga], Gospolitizdat, 1949. 132 p. (Iz opyta raboty partiinykh organizatsii)

DLC: HX337.L3L43

So: LC, Soviet Geography, Part II, 1951/Unclassified

LEBEDEV, I.K.

Rebirth of Latvian sea harbors. Mor.flot 7 no.11:33-36 N '47.
(MLRA 9:6)

1.Sekretar' TSentral'nogo komiteta Kommunisticheskoy partii (bol'shevikov) Latvii.

(Latvia--Harbors)

LEBEDEV, Ivan Kononovich; BOYARSKAYA, L.S., red.; BALLOD, A.I.,tekhn.red.

[On Swedish fields and farms] Na poliakh i fermakh Shvetsii. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1957. 238 p. (MIRA 11:1)
(Sweden--Agricuture)

LEBEDEV, I.K., kand. tekhn. nauk; TRIKASHNYY, N.V., inzh.; TORLOPOV, A.A., inzh.

Some properties of the ashes of coals from the Irsha-Borodino and Nazarovo deposits of the Kansk-Achinsk Basin. Teploenergetika 11 no.11:48-50 N '64. (MIRA 17:12)

1. Tomskiy politekhnicheskiy institut.

LEBEDEV, I.K., kand.tekhn.nauk

Power expenditure on aerodynamic resistance of boiler economizers. Izv.vys.uchab.zav.; energ. 7 no.7:101-105 S '64. (MIRA 18:10)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskiy institut imeni S.M.Kirova. Rekomendovana kafedroy kotloustroyeniya i kotel'nykh ustanovok.

LEBEDEV, L.K., kand. tekhn. nauk; PRIVALIKHIN, G.K., inzh.

Effect of mechanical underfiring and intensity of the sulfating of the ash of Nazarovo coal. Teploenergetika 12 no.6:73-74 Je '65. (MIRA 18:9)

1. Tomskiy politekhnicheskiy institut.

SHAFR, V.Z., kand.knimicheskikh nauk; FREYDLIN, L.Kh., doktor khimicheskikh nauk; KHOL'MER, O.M., inzh.; LEBEDEV, I.M., inzh.; Prinimala uchastiye: GORSKAYA, L.A.

Obtaining ethyl ethers of pyrocatechin and resorcin from their phenolates and ethyl chloride. Masl.-zhir.prom. 28 no.4: 35-37 Ap '62. (MIRA 15:5)

1. Institut organicheskoy khimii AN SSSR imeni Zelinskogo (for Sharf, Freydlin). 2. Moskovskiy zavod "Slozhnyye efiry" (for Khol'mer, Lebedev).

(Ethers)

Lebedev, I. M.

Production of guaiacol propionic acid ester. I. M. Lebedev, V. D. Gorchakov, O. M. Khol'tser, and S. G. Polyakova. U.S.S.R. 103,727, Aug. 25, 1956. Guaiacol and propionic acid are heated in the presence of acid catalysts. The reaction is carried out in a solvent, such as PhMe or other aromatic hydrocarbon. —M. Hoseh

SENCHUROV, K.T., dots., DANITSKIY, I.N., BULIN, P.P., LEBEDEV, I.M., dots. SERGEYEV, M.Ye., prof., VOZNYESENSKIY, N.N., dots., SEBKO, S.T., STEFANOVICH, I.P., kand.tekhn.nauk., TSEREVITINOV, B.F., red.; LEVITAN, I.M., red.izd-va., LEVCHUK, K.V., red.izd-va., BRUDCHENKO, A.M., red.izd-va., LEKANOVA, I.S., tekhn.red.

[Industrial and food products, a commodity guide] Tovarovedenie promyshlennykh i prodovol'stvennykh tovarov. Moskva, Vneshtorgizdat Vol.2. 1958. 574 p. (MIRA 11:9)
(Commercial products)

POLYAKOVA, S.G., inzh.; KHOL'MER, O.M., inzh.; LEBEDEV, I.M., inzh.

Production of guaiacolpropionic ester. Masl.-zhir.prom. 25 no.8:23-24 '59. (MIRA 12:12)

1. Moskovskiy zavod "Slozhnyye efiry."
(Guaiacol) (Propionic acid)

FREDLIN, L.Kh., doktor khim.nauk; SHARF, V.Z., inzh.; KHOL'MER, O.M., inzh.; MALKINA, L.L.; LEBEDEV, I.M., inzh.

Preparation of guaiacol by the catalytic dehydration of a mixture of pyrocatechol and methanol. Masl.-zhir.prom. 26 no.10:24-27 O '60. (MIRA 13:10)

1. Institut organicheskoy khimii AN SSSR imeni N.D.Zelinskogo (for Freydlin, Sharf). 2. Moskovskiy zavod "Slozhnyye efiry" (for Khol'mer, Malkina, Lebedev).
(Guaiacol) (Pyrocatechol) (Methanol)

LEBEDEV, I.M., inzh.; GORKER, I.A., inzh.; MOCHALIN, V.B., kand.khim.nauk

New method of obtaining cumaldehyde and a combined method of obtaining para-isopropyl-α-methylcinnamaldehyde. Masl.-zhir. prom. 27 no. 2:33-35 '61. (MIRA 14:2)

1. Zavod "Slozhnyye efiry" (for Lebedev, Gorker). 2. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova (for Mochalin).

(Benzaldehyde) (Cinnamaldehyde)

FIOSHIN, M.Ya.; LEBEDEV, I.M.; KAZAKOVA, L.I.; GANKIN, S.Z.; KHOL'MER, O.M.; GUREVICH, G.I.; NEYMAN, Ye.Ya.

Electrosynthesis of ω -oxypentadecanoic acid. Khim.prom. no.1:41-43 Ja '62. (MIRA 15:1)

(Pentadecanoic acid)

FREYDLIN, L.Kh., [illegible]; [illegible], inzh.; [illegible], O.[illegible], inzh.; [illegible], L.L.; [illegible], inzh.

Preparation of [illegible] ([illegible]) by the dehydration of a mixture of pyrocatechol and [illegible] on a [illegible] catalyst. [illegible]-khim. prom. 37 no. 2:29-30 '61. ([illegible] 14:?)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo [illegible] SSSR (for Freydlin, Sharf). 2. [illegible]ovskiy zavod "Slozhnyye efiry" (for [illegible], [illegible], [illegible]v).
(Pyrocatechol) ([illegible]yl alcohol) (Phenol)

33441
S/064/62/000/001/004/008
B110/B138

5.3400

AUTHORS: Fioshin, M. Ya., Lebedev, I. M., Kazakova, L. I., Gankin, S. Z., Khol'mer, O. M., Gurevich, G. I., Neyman, Ye. Ya.

TITLE: Electrosynthesis of ω-oxypentadecanoic acid

PERIODICAL: Khimicheskaya promyshlennost', no. 1, 1962, 41 - 43

TEXT: ω-oxypentadecanoic acid (I) is produced by "mutual" anodic condensation of ω-acetoxyundecanoic acid (II) and adipic acid monoethyl ester (III), during the electrolysis of an aqueous solution of a mixture of their salts: $CH_3COO(CH_2)_{10}COO^- + {}^-OOC(CH_2)_4COOC_2H_5 \longrightarrow CH_3COO(CH_2)_{14}COOC_2H_5 + 2CO_2$ and then saponification of ethyl ester. The authors wished to obtain better yields by substituting the aqueous by an alcoholic medium, and the Pt anode by PbO_2, magnetite, and graphite anodes. A cylindrical glass electrolyser with cylindrical, Pt anode, perforated Ni cathode and graphite rod anode concentrically arranged, was

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Electrosynthesis of...

filled with an alcoholic solution of II, III, potash, and soda. Current intensity, voltage, and temperature were measured, and the electrolysis was concluded when 0.7 - 1.0 ml of 0.1 N KOH solution (phenol phthalein) was used per ml of electrolyte. After distilling C_2H_5OH at 20 mm Hg, the following quantities were fractionated at 2 - 5 mm Hg: (a) 30% at 160°C; (b) 25% at 183°C; and (c) 30% at 183 - 200°C. The (c) substance was the ester of I. ~10% ester was separated from (a) and (b). It was saponified for 2 hrs with a 50% KOH solution in the presence of ethanol, then acidified with HCl, and I was extracted with toluene. With 125 ml C_2H_5OH, 21 g II, 45 g III, and 5 g K_2CO_3, the I yield was 45 - 48% at 10 a/dm^2. As 3.42 times the theoretical amount of current is required with an aqueous solution, the yield, 27% must be appropriately divided: 27/3.42 ≈ 8%. As Pt consumption is 150 g ton the possibility of using PbO_2, magnetite, or graphite was studied. The dependence of yield on electrolysis conditions was studied with nonporous graphite in ethyl and propyl alcohol with 112 g of II, 238 g of III, and 24 g of K_2CO_3 at 60 - 65°C. Yield of I, 48 - 50%, was not dependent on the current

Card 2/3

Electrosynthesis of...

intensity in a wide range. Maximum yields were obtained with a II : III ratio of 2 : 1 and 1 : 3 at 12 a/∂m^2, 60 - 65°C and a K_2CO_3 concentration of 20 g/liter. Voltage increases rapidly with anode density and decreases with K_2CO_3 concentration. The optimum is 40 - 50 v. With 7 g/liter H_2O, a ratio of II : III = 1 : 3, and at 14 a/∂m^2 and 60 - 65°C, the yield is 49.2% decreasing to 35%, with 100 g/liter of H_2O. Optimum yields (49.2% current efficiency) are obtained with ethanol or propanol solutions of 112 g/liter II, 238.6 g/liter III, 24 g/liter K_2CO_3;, 7 g/liter H_2O and anode density of 14 a/∂m^2 at 60 - 65°C. If the old solution was replaced when acidity reached 1.2 - 1.4 ml of 0.1 N KOH/ml, yield was 44 - 45% (41.5% current efficiency) at 15 a/∂m^2 and 65 - 70°C. Yield was almost doubled by using an alcoholic electrolyte (six times the current efficiency). Part II which is bound as a salt and does not react, can be recycled. The higher energy consumption (voltage increase 3 - 4 times) is compensated by increased current efficiency. There are 4 figures, 1 table, and 3 Soviet references.

Card 3/3

PETROV, Ye.I.; NOVOSELOV, V.A.; Prinimali uchastiye: CHVANOV, P.A.; SHIROKOV, L.F.; KOROBKOV, V.P.; KULAYEV, P.A.; POPKOVA, L.F.; LEBEDEV, I.M.; BAKAYEV, A.M.

Flotation of Sibay deposit zinc ores. TSvet. met. 35 no.3: 15-18 Mr '62. (MIRA 15:4)
(Flotation) (Sibay region—Zinc ores)

TITKOVA, E.M.; SHESTAKOV, L. Ya.; VINOKUROV, A.I.; SAPRYKIN, V.I.; LEBEDEV, I.M.

Intensification of the performance of flotation machinery in the dressing shops of the "Fosforit" Combine. Khim. prom. 41 no. 12:926-928 D '65. (MIRA 19:1)

2

L 31998-65 / EWT(m)/EPF(c)/EWP(v)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 WW/GS/RM

ACCESSION NR: AT5004101 S/0000/64/000/000/0130/0135

AUTHOR: Patrikeyev, G. A.; Antchak, V. K.; Levinshteyn, M. S.; Khrenov, I. F.; Myagkov, P. L.; Lebedev, I. M.; Kolodyazhnyy, L. I. 25 24

TITLE: The destruction of rubberized materials by abrasion B+1

SOURCE: Nauchno-tekhnicheskoye soveshchaniye po friktsionnomu iznosu rezin. Moscow, 1961. Friktsionnyy iznos rezin (Frictional wear of rubber); sbornik statey. Moscow, Izd-vo Khimiya, 1964, 130-135

TOPIC TAGS: synthetic rubber, rubber wear, frictional wear, rubber abrasion, rubberized fabric

ABSTRACT: The effect of pressure, deformation, contact area and speed on the abrasion of rubberized materials was studied. Single- or double-sided rubberized cotton fabrics were subjected to abrasion on a newly developed tester (see p. 238 in this same collection). A linear relationship was shown to exist between pressure (0.3-5 kg/cm^2) and N, the number of friction cycles required for the destruction of material; but a number of critical ratios of pressure, contact area (and the related radius of the sample holder) and deformation were established at which a rapid change in the fabric properties occurs and

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L 31998-65

ACCESSION NR: AT5004101

complete destruction of the material is rapidly attained. The study of the N-pressure relationship at constant contact area or constant deformation therefore requires preliminary measurements under variable conditions to establish possibly existing critical conditions. The study of abraded materials indicated the existence of various abrasion mechanisms, including pure abrasion, tearing-out and breaking-out of parts, and the adhesive failure of the rubber layer. Good adhesion of the latter to the textile base is particularly required at high (3-5 kg/cm^2) pressures. Orig. art. has: 6 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 05Aug 64 ENCL: 00 SUB CODE: MT

NR REF SOV: 000 OTHER: 000

Card 2/2

LEBEDEV, I.N., agronom-inspektor

With communal efforts. Zashch. rast. ot vred. i bol. 9 no.12: 41-42 '64. (MIRA 18:4)

1. Krasnoyarskaya karantinnaya inspektsiya.

KOVALEVSKAYA, Tat'yana Nikolayevna [Kovalevs'ka, T.M.]; SHPORTYUK, V.I. [translator]; NEZHNIPAPA, V.Ya. [Nezhnypapa, V.IA.], red.; LEBEDEV, I.P. [Lebediev, I.P.], red. kart; GORBUNOVA, N.M., [Horbunova, N.M.], tekhn. red.

[Lvov Province; geographical study] L'vivs'ka oblast'; geografichnyi narys. Kyiv, Derzh. uchbovo-pedagogo. vyd-vo "Radians'ka shkola," 1961. 122 p. (MIRA 15:3)

(Lvov Province--Geography)

MARINICH, Aleksandr Mefod'yevich[Marynych, O.M.]; SHPORTYUK, V.I., red.; LEBEDEV, I.P., red. kart.; GORBUNOVA, N.M., tekhn.red.

[Ukrainian Polesye; physicogeographical sketch]Ukrains'ke Polissia; fizyko-geografichnyi narys. Kyiv, Radians'ka shkola, 1962. 161 p. (MIRA 16:2)
(Polesye--Physical geography)

LEBEDEV, I.S.

Geophysical studies in Buryatia. Trudy BKNII no.7:13-26 '61.
(MIRA 16:4)

(Buryat-Mongolia--Prospecting--Geophysical methods)

Y.S.

LEBEDEV, Y.S.; KORNIYETS, D.V.

Optimum values of high pressures and temperatures in studying the physical parameters of matter in the earth's crust. Geofiz. sbor. no.4:14-18 '63.

Study of the earth's upper mantle in the U.S.S.R. 112-123 (MIRA 16:9)

1. Institut geofiziki AN UkrSSR.

LEBEDEV, I.T., inzh.

Evaluation of the industrial level of radiator systems for heating residential buildings. Vod.i san.tekh. no.5:16-22 My '62. (MIRA 15:7)

(Heating)

BORSHCHOV, Dmitriy Yakovlevich, kand.tekhn. nauk; LUBROVKIN, Semen Davydovich, kand. tekhn. nauk; LEBEDEV, Ivan Terent'yevich, kand. tekhn. nauk; VOLNYANSKIY, A.K., inzh., nauchn. red.

[Sanitary engineering equipment in large-panel construction] Sanitarno-tekhnicheskie ustroistva v krupnopanel'nom stroitel'stve. Moskva, Stroiizdat, 1964. 150 p. (MIRA 18:3)

BOGOMOLOV, D.F.; DUBROVKIN, S.D.; LEBEDEV, I.T.

Planning the installation of sanitary engineering systems in the construction of residential buildings in Moscow. Vod.i san.tekh. no.1:1-5 Ja '60. (MIRA 13:4)
(Moscow--Dwellings--Heating and ventilation)

LEBEDEV, I.T., inzh., starshiy nauchnyy sotrudnik; BULYCHEV, G.G., doktor tekhn.nauk, nauchnyy red.; STESHENKO, A.L., inzh., otv.red.

[Assembly design of a sanitary engineering system for apartment houses.] Montazhnoe proektirovanie sanitarno-tekhnicheskikh sistem zhilykh domov. Moskva, 1962. 50 p. (Moscow. Glavnoe upravlenie po zhilishchnomu i grazhdanskomu stroitel'stvu. Nauchnoe soobshchenie, no.37) (MIRA 18:11)

LEBEDEV, I. V.

1516. The nature of the exothermic effects in kaolin.—I. W. LEBEDEW (*Silikat Tech.*, 4, 545, 1953). From considerations of the change in structure and bonding within the kaolin lattice during heating, it is concluded that the formation of γ-Al_2O_3 causes no exothermic effect. The formation of aluminium silicate nuclei and the appearance of sillimanite and mullite gives rise to a rapid release of energy (exothermic effect). According to whether sillimanite or mullite first appears at the beginning of the exothermal effect the progress of conversion of γ-Al_2O_3 can be explained differently. It may combine directly with SiO_2 to give mullite, or with sillimanite (again giving mullite). In either case the reaction is slightly exothermic, but this is masked by an endothermic process caused by free amorphous SiO_2. When the SiO_2 has eventually coagulated, a new bonding arrangement between O and Si occurs, and the second exothermic effect then appears. By similar reasoning the process of mullite formation in other substances, e.g. allophanes, artificial mixtures, kyanite and andalusite, etc. can be explained.

LEBEDEV, Ivan Vasil'yevich, kand.tekhn.nauk; SEMIBRATOV, M.N., kand.tekhn. nauk, red.; SHTEYNBOK, G.Yu., inzh., vedushchiy red.; UDAL'TSOV, A.N., glavnyy red.

[Stereoscopic parallaxometer] Stereoskopicheskii parallaksomer. Moskva, In-t tekhniko-ekon.inform., 1956. 22 p. (Pribory i stendy. Tema 7, no.P-56-424) (MIRA 11:2)
(Optical instruments) (Parallax)

LEBEDEV, Ivan Vasil'yevich; BOGACHEV, A., redaktor; TROYANOVSKAYA, N., tekhnicheskiy redaktor

[Atomic energy for the good of the people] Atomnuiu energiiu - na blago naroda. Moskva, Gos. izd-vo polit. lit-ry, 1956. 76 p. (MLRA 9:12)
(Atomic power)

LEBEDEV, I.V.

Iteration formulae for calculating the course of a light ray through a refractory spherical surface of great radius. Inzh.-fiz.zhur. no.2:69-74 F '59. (MIRA 13:1)

1. Institut fiziki i matematiki AN BSSR, Minsk.
(Refraction)

LEBEDEV, I.V.

Role of silicon in internal white structure fromation in cast iron piston rings. Lit.proizv. no.2:45 F '60. (MIRA 13:5)
(Iron founding)

LEBEDEV, I.V.

Effect of the chemical composition of cast iron on the inverse chill in piston rings. Izv.vys.ucheb.zav.; chern.met. no.3: 136-139 '60. (MIRA 13:4)

1. Gor'kovskiy politekhnicheskiy institut.
(Cast iron--Metallography)

S/191/63/000/001/017/017
B117/B180

AUTHORS: Kozlov, I. A., Lebedev, I. V.

TITLE: Internal stresses arising in the production of bonded glass mat parts

PERIODICAL: Plasticheskiye massy, no. 1, 1963, 74 - 75

TEXT: Two annealed constantan wire-type resistance strain gauges were placed perpendicular to each other on paper between the bonded glass layers, and immersed in phenol resin. Strains were measured in the plate during polycondensation (12 hrs at 135°C) and subsequent cooling. The temperature was checked by thermocouples close to the strain gauges. Their resistance was affected by the temperature and the shunt caused by the liquid resin. After appropriate corrections for the resulting errors, the following was found: Polymerization of the resin began at 80-85°C, accompanied by considerable separation of moisture; the resistance and sensitivity of the gauges decreased. As moisture separation diminished and the resin gradually dried out, the resistance vanished, and then rose steadily again until the end of the process at 135°C. After the heat treatment and cooling, the surface layer of the plate was extended and the

boundary layer compressed. Maximum residual stress in the plate was 1.2 - 1.4 kg/mm^2, which is approx. 65 % the ultimate tensile stress. This agreed with tensile tests data: the tensile strength of specimens cut out of the plate was about 1.2 - 1.5 kg/mm^2 lower than that of specimens without asbestos-base bonded glass layers. There are 2 figures.

S/114/63/000/003/005/005
E191/E435

AUTHORS: Pisarenko, G.S., Corresponding Member of AS UkrSSR,
Doctor of Technical Sciences, Professor,
Kozlov, I.A., Candidate of Technical Sciences,
Lebedev, I.V., Engineer

TITLE: Plastic deformation of a rotating disc

PERIODICAL: Energomashinostroyeniye, no.3, 1963, 26-28

TEXT: Reference is made to earlier experiments conducted and published by the two junior authors (Energomashinostroyeniye, no.2, 1960 and Teploenergetika, no.12, 1960) in which a carbon steel disc with a center bore was spun up. A radially flexible but torsionally stiff element inside the bore permitted almost unrestrained radial expansion of the disc. The yield stress was defined by a residual strain of 0.2%. The strains in the disc of 365 mm outside diameter and a uniform thickness of 20 mm were measured with wire strain gauges at speeds up to 18000 rpm. Strains are plotted against rpm for several points on the disc. Plastic deformation clearly begins where the plot becomes steep. A correlation is sought with the stress-strain diagram obtained in tensile tests. It is seen that the yield point obtained in

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Plastic deformation ...

this experiment, having regard to the stressing conditions and the accepted hypotheses about complex stresses under small elastoplastic deformations, is only slightly lower than the 0.2% residual strain definition. A comparison with an analytical computation in a graph of the spread of the plastic zone along the disc radius plotted against the rotational speed shows that the inner layers of the disc change into the plastic state much later and the outer layers much earlier than in accordance with analysis. The range of rotational speeds wherein the disc is in an elastoplastic state is in fact much smaller than in theory. An explanation is the redistribution of stresses which causes a departure from the linear stress/strain relationship ahead of the yield point. It follows that a safety factor derived as a ratio of the load at which residual stresses appear in the disc to the actual working load may be substantially misleading. It is pointed out that the approach of G.Weiss and V. Prager (Journal of the Aeronautical Sciences, no.3, 1954) based on a concept by which the entire radial cross-section of the disc moves bodily when the plastic deformation is reached, yields the best results for approximate stressing calculations. There are 5 figures.

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PISARENKO, Georgiy Stepanovich; TROSHCHENKO, Valeriy Trofimovich; TIMOSHENKO, Vsevolod Georgiyevich; KUZ'MENKO, Vasiliy Aleksandrovich; ISAKHANOV, Georgiy Vakhtangovich; TRET'YACHENKO, Georgiy Nikolayevich; GRYAZNOV, Boris Alekseyevich; NOVIKOV, Nikolay Vasil'yevich; RUDENKO, Vasiliy Nikitich; SHUMILOVA, Rufina Gerasimovna; LEBEDEV, I.V., red.; DAKHNO, Yu.B., tekhn. red.

[Strength of ceramic metals and alloys at normal and high temperatures]Prochnost' metallokeramicheskikh materialov i splavov pri normal'nykh i vysokikh temperaturakh. Kiev, Izd-vo Akad. nauk USSR, 1962. 274 p. (MIRA 16:2)

1. Chlen-korrespondent Akademii nauk Ukr.SSR (for Pisarenko).
(Ceramic metals)
(Metals at high temperatures)

L 39285-65 EWT(d)/EPA(s)-2/EWT(m)/EWP(w)/EPF(c)/EPR/EWP(j)/T/EWP(k)
Pf-4/Pr-4/Ps-4/Pt-10 WW/EM/GS/RM
ACCESSION NR: AT5000828 S/0000/64/000/004/0323/0328

AUTHOR: Lebedev, I. V. (Kiev); Kozlov, I. A. (Kiev)

TITLE: Experimental investigation of the stressed condition of glass fabric filled laminated plastics at high temperatures

SOURCE: Nauchnoye soveshchaniye po teplovym napryazheniyam v elementakh konstruktsiy, 4th. Teplovyye napryazheniya v elementakh konstruktsiy (Thermal stresses in construction elements); doklady soveshchaniya, no. 4. Kiev, Naukova dumka, 1964, 323-328

TOPIC TAGS: laminated plastic, plastic stress, glass fabric, laminated plastic internal stress, laminated plastic thermal stress, high temperature stress

ABSTRACT: One of the main problems of engineering practice is the investigation of internal stress in laminated plastics, which is the basis of their structural strength. During the manufacture of laminated plastics their volume changes (shrinks) due to polycondensation and establishment of thermal equilibrium. Shrinkage varies because of anisotropic physical and mechanical properties, while internal stresses appear. These stresses together with the temperature stresses and stresses arising under external pressure lead to the formation of cracks.

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L 39285-65
ACCESSION NR: AT5000828

The internal stresses are difficult to define. Therefore, special attention is being paid to the experimental determination of these stresses. The best method of measurement is a wire strain gauge which is small in size and does not violate the structure and homogeneity of the tested part when it is mounted in the material. Such properties of the glass fabric filled laminated plastics as high dielectric constants and good adhesion to the strain gauge allow units made of 0.03-mm diameter annealed constantan wire to be mounted satisfactorily. These units were aged at 150C for 20 hours, and heating of the connecting wires was compensated by an additional coil. The temperature curve shows that the resistance of the wire strain gauge during cooling did not coincide with its resistance during heating. This is probably caused by shrinkage of the material at high temperatures. The effect of polycondensation is shown in curves included in the paper. It was found that temperature stresses arise even when there is uniform temperature distribution, due to the different elongations of separate layers. The authors indicate that high temperatures cause shrinkage. The presence of external connections leads to internal stress which affects the strength of the glass fabric filled laminated plastics at high temperatures. The tests also showed that the shrinkage rage decreases with time. Orig. art. has: 5 figures and 2 formulas.

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SUBMITTED 2 JUN 64

L 11254-66 FBD/EWT(1)/EEC(k)-2/T/EWP(k)/EWA(m)-2/EWA(h) SCTB/IJP(c) WG

ACC NR: AP6001930 SOURCE CODE: UR/0142/65/008/006/0632/0636

AUTHOR: Lebedeva, V. V.; Lebedev, I. V.; Odintsov, A. I.

ORG: none

TITLE: Effect of load mismatch on laser operation

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 6, 1965, 632-636

TOPIC TAGS: laser, ~~NeHe laser, laser operation~~ gaseous state laser, neon, helium

ABSTRACT: The results of an investigation of the effect of load mismatch on the power of a Ne-He laser are reported. Laser 1 (see figure) with concave mirrors 2 (radius, 1160 mm), having a reflection factor of 98%, generated power at 0.633 μ. Diaphragm 3 ensured excitation of a TEM_{00} mode in the laser; calibrated neutral light filters 4 and spherical mirror 5 acted as a mismatched load. The generated power was measured by a quadripole scheme which included an FEU-22 photomultiplier (PM) and an ENO-1 oscillograph. A laser equivalent circuit reduced to the plane of the output mirror is used to derive formulas describing the negative conductance of the laser

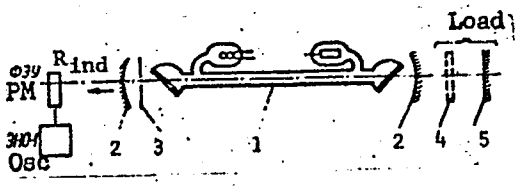

Fig. 1. Experimental laser

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ACC NR: AP6001930

medium as a function of the oscillation amplitude, with the pumping power kept constant: $G_- = f(U_m)$. Experimental maximum and minimum laser power for nine filters whose transparencies lay within 0.74--0.01 is shown. The experimental laser negative conductance falls off as U_m increases, as is generally the rule in soft-excited oscillators. The Ne-He laser has a pronounced nonlinearity within the entire range (20 db of saturation power) of its output power. Orig. art. has: 4 figures, and 12 formulas.

[03]

SUB CODE: 20 / SUBM DATE: 13May65 / ORIG REF: 001 / ATD PRESS: 4174

Card 2/2

PHASE I BOOK EXPLOITATION SOV/6067

Pisarenko, Georgiy Stepanovich, Igor' Andreyevich Kozlov, Georgiy Nikolayevich Tret'yachenko, Leonid Vasil'yevich Kravchuk, and Igor' Vladimirovich Lebedev

Nekotoryye voprosy prochnosti lopatok i diskov gazovykh turbin; stoykost' lopatok protiv teplosmen i predel'naya nesushchaya sposobnost' diskov (Some Problems of the Strength of Gas-Turbine Blades and Disk; Thermal Shock Resistance of Blades and Ultimate Load-Carrying Capacity of Disk). Kiyev, Izd-vo AN UkrSSR, 1962. 74 p. 1660 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut metallokeramiki i spetsial'nykh splavov.

Resp. Ed.: G. S. Pisarenko; Ed. of Publishing House: B. A. Gryaznov; Tech. Ed.: T. R. Liberman.

PURPOSE: This booklet is intended for engineers and scientific research workers concerned with problems of the strength of turbine parts.

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Some Problems of (Cont.) SOV/6067

COVERAGE: The booklet reviews problems connected with the determination of the strength of the most loaded and important gas-turbine parts -- disk and blades. Methods of measuring temperatures and stresses are discussed and experimental units described. Particular attention is given to the investigation of disk beyond the yield point and blades under nonstationary condition. No personalities are mentioned. There are 101 references, mostly Soviet.

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Experimental Units for Determining the Strength of Gas-Turbine Parts 6

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Stand for testing rotor parts in the centrifugal-force field 12
Methods of Investigating Temperature Fields and Stresses 15

KOZLOV, I.A.; LEBEDEV, I.V.

Experimental investigation of the stress condition beyond the plastic limit. Zav. lab. 29 no.9:1125-1127 '63. (MIRA 17:1)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.

LEBEDEV, I.V.

New plants from Jurassic sediments in the Kuznetsk Basin. Mat.po geol.Zap.Sib. no.63:193-202 '62. (MIRA 16:10)

LEBEDEV, I.V.

On the problem of local scouring behind horizontal reinforcement.
Gidr.stroi. 23 no.8:43 '54. (MLRA 8:1)
(Hydraulic engineering)

LEBEDEV, I. V.

Lebedev, I. V.

"The Hydraulics of the Compression and Expansion of a Stream Confined by the Dam Structures of a Hydorelectric Power Station." Min Higher Education USSR. Moscow Order of Lenin Power Engineering Inst imeni V. M. Molotov. Moscow, 1955 (Dissertation for the degree of Candidate in Technical Science)

SO: Knizhnaya letopis' No. 27, 2 July 1955

LEBEDEV, I. V.

124-11-12958

Translation from: Referativnyy Zhurnal, Mekhanika, 1957, Nr 11, p. 96 (USSR)

AUTHOR: Lebedev, I. V.

TITLE: Spark Method of Photostroboscopy of Hydraulic Phenomena. (Iskrovoy metod fotofiksatsii gidravlicheskikh yavleniy)

PERIODICAL: Tr. Mosk. energ. in-ta, 1956, Nr 19, pp 154-159.

ABSTRACT: Description of a device to render visibile a flow of air over slotted aerodynamic models with the aid of a scintillating wood dust injected into the flow. By arresting the motion of the particles by means of a camera equipped with a lens covered by a rotating disk with two diametrally opposed openings, the flight of particles moving at speeds of 20 to 30 m/sec can be photographed. The disk is driven by a synchronous motor at 3,000 rpm. From the photographs obtained thereby it is possible to determine the speed as well as the direction of the flow in any desired portion of the space about an obstacle. However, in that instance, it is indispensable that a massive and uninterrupted injection into the flow of scintillating particles (0.25 to 1.0 mm) be maintained. The device described in the paper reduces the required testing time to one-third of now customary methods.

(N. P. Zrelov)

Card 1/1

LEBEDEV, I.V., kandidat tekhnicheskikh nauk.

Stream compression with cofferdams in building hydraulic power installations on rivers flowing through plains. Gidr. stroi. 26 no.3:40-44 Mr '57. (MLRA 10:4)
(Cofferdams) (Hydroelectric power stations)

IZBASH, S.V.; KHALDRE, Kh.Yu.. Prinimal uchastiye: LEBEDEV, I.V., kand.tekhn.nauk; PASHKOV, N.N., red.; LARIONOV, G.Ye., tekhn.red.

[Hydraulics of river damming] Gidravlika perekrytiia rusel rek. Moskva, Gos.energ.izd-vo, 1959. 207 p. (MIRA 12:8)
(Dams)

LEBEDEV, I.V., dotsent, kand.tekhn.nauk

Experience in aerodynamic modeling of open flows. Izv.vys. ucheb.zav.; energ. 2 no.12:112-117 D '59. (MIRA 13:5)

1. Moskovskiy ordena Lenina energeticheskiy institut. Predstavlena kafedroy gidravliki.
(Hydraulic engineering) (Hydrodynamics)

LEBEDEV, I. V. (Moscow)

"New Results Concerning the Spreading of a Slow Stream on a Plane Surface."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

88216

S/114/60/000/002/006/007
E194/E155

26.2120

AUTHORS: Kozlov, I.A., Engineer, and Lebedev, I.V., Engineer

TITLE: Stress Investigation of Rotating Discs by Means of Strain Gauges

PERIODICAL: Energomashinostroyeniye, 1960, 6, No. 2, pp. 40-41

TEXT: In order to correctly assess stresses in turbine discs of various shapes and having stress concentrators, it is very important to make actual measurements of stress and strain at high speeds. Tests with resistance strain gauges were made on a special speed-testing device on discs of steel grade ЭИ-415 (EI-415) of 340 mm external diameter, 20 mm thick. The disc had three holes of 16 mm diameter, spaced uniformly at a radius of 75 mm. Constantan strain gauges were attached to the disc along the directions of main stress, both radially and tangentially. Some strain gauges were placed near the holes. The method of fixing the strain gauges and the experimental set-up are described. The leads from the strain gauges to the measuring equipment were brought out through a 20-position mercury commutator. Mercury was chosen because its contact resistance is not much affected by vibration, which was in

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Stress Investigation of Rotating Discs by Means of Strain Gauges

any case diminished by connecting the device to the main shaft through a rubber tube. The tests were made by running the disc up to a certain speed which was held constant while the strain gauge readings were taken; the speed was then raised by a further thousand r.p.m. Prolonged operation at high speed raised the temperature of the disc and the commutator. The method of correcting for this by taking readings both at the start and at the end of the test is explained, also the method of calibrating the strain gauges. Fig.2 shows the relationship between the radial and tangential stresses and speed at various radii at parts remote from the holes. The influence of the holes as stress concentrators may be judged from the tabulated data which give strain in the disc at places near to and remote from the hole. Fig.3 shows graphs of total strains in the disc as function of the speed, based on strain data obtained at different points on the disc. It is concluded that the method may be used to measure stresses and strains directly in the disc rotating at speeds up to 18 000 - 20 000 r.p.m., which is still not the limit.

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Stress Investigation of Rotating Discs by Means of Strain Gauges

Particular care must be taken to correct for heating of the disc and commutator.
There are 3 figures, 1 table and 4 Soviet references.

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